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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/848,742	05/17/2004	Masayoshi Hiramoto	10873.792USD1	7331
23552	7590	12/23/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			BERNATZ, KEVIN M	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/848,742	Applicant(s) HIRAMOTO ET AL.	
	Examiner Kevin M. Bernatz	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,12-17,39,41,42,45,47,48,51,59,61-63,65,66,69,71 and 72 is/are pending in the application.
 4a) Of the above claim(s) 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,12-17,39,41,42,45,47,48,51,61-63,65,66,69,71 and 72 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. Amendments to claims 5, 65 and 66, filed on October 5, 2005, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1 – 3, 5, 12 – 14, 17, 39, 45, 51, 65, 66 and 69 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukuzawa et al. (U.S. Patent App. No. 2005/0030676 A1) for the reasons of record as set forth in Paragraph No. 8 of the Office Action mailed on April 14, 2005.

Claim Rejections - 35 USC § 103

4. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa et al. as applied above, and further in view of Sakakima et al. (J. Mag. Mag. Mat., 210, 2000, L20-L24) for the reasons of record as set forth in Paragraph No. 10 of the Office Action mailed on April 14, 2005.

5. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa et al. as applied above, and further in view of Redon et al. (U.S. Patent No. 6,381,107 B1) for the reasons of record as set forth in Paragraph No. 11 of the Office Action mailed on April 14, 2005.

6. Claims 1, 5, 12, 13, 15, 7, 39, 45 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odagawa et al. (U.S. Patent App. No. 2002/0058158 A1) in view of Parkin (U.S. Patent No. 5,585,986) for the reasons of record as set forth in Paragraph No. 12 of the Office Action mailed on April 14, 2005.

7. Claims 2, 14, 16, 51 and 61 – 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odagawa et al. in view of Parkin as applied above, and further in view of Fukuzawa et al. ('676 A1) for the reasons of record as set forth in Paragraph No. 13 of the Office Action mailed on April 14, 2005.

8. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odagawa et al. in view of Parkin as applied above, and further in view of Redon et al. ('107 B1) for the reasons of record as set forth in Paragraph No. 14 of the Office Action mailed on April 14, 2005.

Response to Arguments

9. The Double Patenting rejection of claims 1 – 3, 5, 12 – 17, 39, 41, 42, 45, 47, 48, 51, 61 – 63, 65, 66, 69, 71 and 72 in view of Patent '655 B2

The above noted rejection has been withdrawn in view of applicant(s) filed terminal disclaimer, which is deemed proper and terminally disclaims over Patent '655 B2.

10. The rejection of claims 1 – 3, 5, 12 – 17, 39, 41, 42, 45, 47, 48, 51, 61 – 63, 65, 66, 69, 71 and 72 under 35 U.S.C § 102(e) and/or 103(a) – Fukuzawa et al., alone or in view of various references

Applicant(s) argue(s) that Fukuzawa et al. fails to disclose a free layer including a pair of magnetic layers sandwiching the MR-improving layer (*page 11 of response*). The examiner respectfully disagrees.

As noted in the rejection of record, Figure 43 of Fukuzawa et al. illustrates an embodiment comprising a free layer including a pair of magnetic layers (*elements 1a and 1b*) sandwiching the non-magnetic MR-improving layer (*elements 4a and 4b*).

Applicants' further appear to argue unexpected results versus the Fukuzawa et al. invention, concluding that "Fukuzawa et al. does not teach or suggest a thickness of the MR-improving layer is set to be in the range of 2.6 to 10 nm so as to utilize the magnetostatic coupling without utilizing the exchange coupling, whereby the coercivity is maintained within a low range, even when the element area is not larger than 100 μm^2 " (*pages 11 – 12 of response*). The Examiner respectfully disagrees.

First, applicant(s) are reminded that **a detailed description of the reasons and evidence** supporting a position of unexpected results must be provided **by applicant(s)**. A mere pointing to data requiring the examiner to ferret out evidence of unexpected results **is not sufficient** to prove that the results would be truly unexpected to one of ordinary skill in the art. *In re D'Ancicco*, 439 F.2d 1244, 1248, 169 USPQ 303, 306 (1971) and *In re Merck & Co*, 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986). Second, applicants' are reminded that the claims must be commensurate in scope with any showing of unexpected results. From the arguments currently presented, the Examiner notes that the present claims do not recite anything regarding magnetostatic versus exchange coupling, nor the coercivity of the element, both of which would appear to be critical to any showing of unexpected results. From a review of applicants' specification, it would also appear that the Ms and thickness of the ferromagnetic films appear to be critical (*pages 33 – 34*) and that specific materials are required for the non-magnetic layer (*page 33, lines 17 – 25*).

11. The rejection of claim 1 – 3, 5, 12 – 17, 39, 41, 42, 45, 47, 48, 51, 61 – 63, 65, 66, 69, 71 and 72 under 35 U.S.C § 103(a) – Odagawa et al. in view of Parkin, alone and in view of various references

Applicant(s) argue(s) that "Odagawa et al. discloses that the thickness of the MR-improving layer falls between 0.4 and 1 nm (Paragraph 229). The structure is intended to utilize the exchange coupling, and therefore fails to teach the features of claim 1 for the reasons discussed above" (*page 13 of response*) and that "neither Parkin nor

Odagawa et al. disclose a thickness of the non-magnetic layer set in the range of 2.6 to 10 nm so as to utilize magnetostatic coupling without using the exchange coupling, whereby the coercivity is maintained with a low range, even in a case of a small width or a small element area that is not larger than $1000\text{ }\mu\text{m}^2$ (page 14 of response). The examiner respectfully disagrees.

First, the Examiner notes that attacking individual references cannot rebut rejections predicated on a combination of references. Second, the examiner notes that the specification is not the measure of the invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968). The present claims do not require “magnetostatic coupling without using the exchange coupling” nor a coercivity range.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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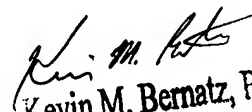
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
December 19, 2005


Kevin M. Bernatz, PhD
Primary Examiner